

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of	)	<b>MAIL STOP PATENT APPLICATION</b>
	)	
Peter Borden MACKENZIE et al.	)	Group Art Unit: Unassigned
	)	
Application No.: Unassigned	)	Examiner: Unassigned
(Divisional of Application No. 09/985,614)	)	
	)	Confirmation No.: Unassigned
Filed: July 29, 2003	)	
	)	
For: IMPROVED PRODUCTIVITY	)	
CATALYSTS AND	)	
MICROSTRUCTURE CONTROL	)	

**FIRST  
INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. § 1.56, Applicants hereby submit the following information in conformance with 37 C.F.R. §§ 1.97 and 1.98.

All of the listed documents were previously made of record in prior Application Serial No. 09/985,614, filed November 5, 2001, upon which Applicants rely for the benefits provided in 35 U.S.C. § 120. In accordance with 37 C.F.R. § 1.98, those documents which were previously made of record in the prior application are not included.

U.S. Patent Nos.	Applicant	Date
4,564,647	Hayashi et al.	01-14-1986
4,724,273	Fink et al.	02-09-1988
4,752,597	Turner	06-21-1988
5,106,804	Bailly et al.	04-21-1992
5,132,380	Stevens et al.	07-21-1992
5,227,440	Canich et al.	07-13-1993
5,296,565	Ueda et al.	03-22-1994
5,324,800	Welborn, Jr. et al.	06-28-1994

U.S. Patent Nos.	Applicant	Date
5,331,071	Kataoka et al.	07-19-1994
5,332,706	Nowlin et al.	07-26-1994
5,350,723	Neithamer et al.	09-27-1994
5,399,635	Neithamer et al.	03-21-1995
5,466,766	Patsidis et al.	11-14-1995
5,468,702	Jejelowo	11-21-1995
5,474,962	Takahashi et al.	12-12-1995
5,578,537	Hermann et al.	11-26-1996
5,863,853	Vaughan et al.	01-26-1999
5,866,663	Brookhart et al.	02-02-1999
5,880,241	Brookhart et al.	03-09-1999
5,880,323	Brookhart, III et al.	03-09-1999
5,886,224	Brookhart et al.	03-23-1999
5,891,963	Brookhart et al.	04-06-1999
6,197,715	Bansleben et al.	3-2001

Foreign Patent Nos.	Country	Date
19707236 A1	DE	08-27-1998
19944993 A1	DE	03-22-2001
19959251 A1	DE	12-12-1999
0 381 495 A2	EP	08-08-1990
0 416 815 A2	EP	03-13-1991
0 420 436 A1	EP	04-03-1991
0 532 098 A1	EP	03-17-1993
0 641 804 A2	EP	03-08-1995
0 874 005 A1	EP	10-28-1998
0 816 384 A2	EP	01-07-1998
0 884 331 A2	EP	12-16-1998
0 893 455 A1	EP	01-27-1999
1 099 714 A1	EP	11-12-1999
Hei 9-255712	JP	09-30-1997
Hei 9-272709	JP	10-21-1997
Hei 9-272713	JP	10-21-1997
10-324709	JP	03-21-1997
94/01471	WO	01-20-1994
94/11410	WO	05-26-1994
94/14854	WO	07-07-1994
96/23010	WO	08-01-1996
97/02298	WO	01-23-1997
97/17380	WO	05-15-1997

Foreign Patent Nos.	Country	Date
97/38024	WO	10-16-1997
97/48735	WO	12-24-1997
97/48736	WO	12-24-1997
97/48737	WO	12-24-1997
97/48739	WO	12-24-1997
97/48740	WO	12-24-1997
97/48742	WO	12-24-1997
97/48777	WO	12-24-1997
98/03521 A	WO	01-29-1998
98/03559	WO	01-29-1998
98/11144	WO	03-19-1998
98/27124	WO	06-25-1998
98/30609	WO	07-16-1998
98/30610	WO	07-16-1998
98/37110	WO	08-27-1998
98/40374	WO	09-17-1998
98/40420	WO	09-17-1998
98/40421	WO	09-17-1998
98/41529	WO	09-24-1998
98/42664	WO	10-01-1998
98/42665	WO	10-01-1998
98/47933	WO	10-29-1998
98/47934	WO	10-29-1998
98/56832	WO	12-17-1998
99/02472	WO	01-21-1999
99/02570	WO	01-21-1999
99/05189	WO	02-04-1999
99/09078	WO	02-25-1999
99/10391	WO	03-04-1999
99/12981	WO	03-18-1999
99/62968 A	WO	12-09-1999
00/04057	WO	01-27-2000
00 15646 A	WO	03-23-2000
00/47592 A1	WO	02-09-1999
00/50470 A	WO	08-31-2000
00/58320 A1	WO	03-29-1999
01/07491 A1	WO	07-27-1999
01/07492 A1	WO	09-20-1999
01/12684 A1	WO	08-02-1999
01/14391 A1	WO	09-20-1999

Foreign Patent Nos.	Country	Date
01/21586 A1	WO	09-20-1999
01/23396 A1	WO	09-29-1999
01/42257 A1	WO	12-09-1999
01/55231 A1	WO	01-26-2000
01/92342 A	WO	12-06-2001

#### Non-Patent Literature Documents

A. BACH, et al., "Metal Chelates of N-(1-Pyrrolyl)salicylaldehydes and Their Structure Determination by X-Ray Structure Analysis and X-Ray Absorption Spectroscopy (XANES)," *Z. Naturforsch., Chem. Sci.*, 1996, pp. 757-764, Vol. 51(6)

A. V. BORDUNOV, et al., "Azacrown Ethers Containing Oximic and Schiff Base Sidearms - Potential Heteronuclear Metal Ion Receptors," *Tetrahedron, NL*, 29 December 1997, pp. 17595-17606, Vol. 53, No. 52, Elsevier Science Publishers, Amsterdam

M. BROOKHART et al., *J. Am. Chem. Soc.*, 1995, pp. 6414-6415, 117

BUELOW, "Chemische Berichte," *Berichte Der Deutschen Chemischen Gesellschaft, DE, Verlag Chemie. Weinheim*, 1905, pp. 3915, 3917, Vol. 38

R. M. CLARAMUNT, et al., "Rhodium (I) Complexes with the Polydentate Ligand 3,5-bis(4-methylpyrazol-1-yl)-4-methylpyrazole," *Journal Organometallic Chemistry*, 1991, pp. 259-271, Vol. 412, No. 1-2

I. O. FRITSKY, et al., "Template Synthesis of Square-Planar Nickel (II) and Copper (III) Complexes Based on Hydrazide Ligands," *J. Chem. Soc., Dalton Trans.*, 1998, pp. 3269-3274, Vol. 19

V. C. GIBSON et al., *Chem. Commun.*, 1998, pp. 313-314

S. D. ITTEL et al., "Late-Metal Catalysts for Ethylene Homo- and Copolymerization," *Chem. Rev.*, 2000, pp. 1169-1203, 100

W. KEIM et al., *Angew Chem. Int. Ed. Engl.*, 1981, pp. 116-117, 20

D. H. McCONVILLE et al., *J. Am. Chem. Soc.*, 1996, pp. 10008-10009, 118

**Non-Patent Literature Documents**

V. M. MOHRING et al., *Agnew. Chem. Int. Ed. Engl.*, 1985, pp. 1001-1003, 24

K. K. NARANG, et al., "Glyoxal-Aroyl Hydrazone (Schiff Base) Complexes of Nickel (II), Copper (II) & Zinc (II), *Indian J. Chem., Sect. A.*, 1982, pp. 830-832, Vol. 21A(8)

K. K. NARANG, et al., "Synthesis, Characterization, Thermal Studies and Biological Activity of Iron (III) Complexes with Some Acylhydrazines," *Synth. React. Inorg. Met.-Org. Chem.*, 1993, pp. 971-989, Vol. 23(6)

F. A. NEUGEBAUER, "ESR Studies of 1,2,4,5-Tetraazapentenyls," *Chem. Ber.*, 1973, pp. 1716-1723, Vol. 106(6)

M. PEUCKERT et al., *Organometallics*, 1983, pp. 594-597, 2

S. B. ROSCOE et al., "Polyolefin Spheres from Metallocenes Supported on Noninteracting Polystyrene," *Science*, 1998, pp. 270-273, 280

L. ROSENBERG, et al., "Binuclear Nickel (II) and Cobalt (II) Complexes of the Novel Binucleating Ligand 3,-Bis(1'-pyrazolyl)pyridazine. Crystal and Molecular Structure and Magnetism of Bis[ $\mu$ -3,6-bis(1'-pyrazolyl)pyridazine-N<sup>1</sup>(Ni<sup>1</sup>)N<sup>2</sup>(Ni<sup>1</sup>)N<sup>2</sup>(Ni<sup>1</sup>)N<sup>2</sup>(Ni<sup>2</sup>)N<sup>2</sup>(Ni<sup>2</sup>)]-bis[diaquanickel (II)] Tetrachloride Dihydrate," *J. Chem. Soc., Dalton Trans.*, 1986, pp. 625-631, Vol. 3

M. SCHMID et al., "New  $C_{2v}$  and Chiral  $C_2$ -Symmetric Olefin Polymerization Catalysts Based on Nickel (II) and Palladium (II) Diimine Complexes Bearing 2,6-Diphenyl Aniline Moieties: Synthesis, Structural Characterization, and First Insight into Polymerization Properties," *Organometallics*, 2001, 20(11), 2321

R. R. SCHROCK et al., *J. Am. Chem. Soc.*, 1997, pp. 3830-3831, 119

R. R. SCHROCK et al., *J. Am. Chem. Soc.*, 1999, pp. 5797-5798, 121

S. H. STRAUSS, *Chem. Rev.*, 1993, pp. 927-942, 93

**Non-Patent Literature Documents**

A. A. WATSON, et al., "Chiral Heterocyclic Ligands. VIII. Syntheses and Complexes of New Chelating Ligands Derived from Camphor," *Aust. J. Chem.*, 1995, pp. 1549-1572, Vol. 48, No. 9

OLEG V. MIKHAILOV, "From Novel Complexing Conditions to Novel Coordination Compounds of Nickel (II) with Dithiooxamide and its Bulky Analogues," *Transition Met. Chem.*, (1996), 363-369, 21

TIMO REPO, et al., "Ethylenebis(Salicylidenetiminato)zirconium Dichloride: Crystal Structure and Use as a Heterogeneous Catalyst in the Polymerization of Ethylene," *Macromolecules*, (1997), 171-175, 30


This information is being submitted within three (3) months of the filing or entry of the national stage of this application or before the first Office Action on the merits, whichever is later. Since the information is being filed within the time period set forth in 37 C.F.R. § 1.97(b) no fee or statement is required.

To assist the Examiner, the documents are listed on the attached form PTO-1449. It is respectfully requested that an Examiner-initialed copy of this form be returned to the undersigned.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: July 29, 2003

By:   
Nhat D. Phan  
Registration No. 39,581

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(703) 836-6620

Substitute for forms 1449A/PTO & 1449B/PTO  <b>FIRST INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	ATTORNEY'S DKT No. 008111-160	APPLICATION No. Unassigned
	APPLICANT Peter B. Mackenzie et al.	
	FILING DATE July 29, 2003	GROUP Unassigned

U.S. PATENT DOCUMENTS				
Examiner Initials	Document Number	Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Issue/Publication Date (MM-DD-YYYY)
	4,564,647		Hayashi et al.	01-14-1986
	4,724,273		Fink et al.	02-09-1988
	4,752,597		Turner	06-21-1988
	5,106,804		Bailly et al.	04-21-1992
	5,132,380		Stevens et al.	07-21-1992
	5,227,440		Canich et al.	07-13-1993
	5,296,565		Ueda et al.	03-22-1994
	5,324,800		Welborn, Jr. et al.	06-28-1994
	5,331,071		Kataoka et al.	07-19-1994
	5,332,706		Nowlin et al.	07-26-1994
	5,350,723		Neithamer et al.	09-27-1994
	5,399,635		Neithamer et al.	03-21-1995
	5,466,766		Patsidis et al.	11-14-1995
	5,468,702		Jejelowo	11-21-1995
	5,474,962		Takahashi et al.	12-12-1995
	5,578,537		Hermann et al.	11-26-1996
	5,863,853		Vaughan et al.	01-26-1999
	5,866,663		Brookhart et al.	02-02-1999
	5,880,241		Brookhart et al.	03-09-1999
	5,880,323		Brookhart, III et al.	03-09-1999
	5,886,224		Brookhart et al.	03-23-1999
	5,891,963		Brookhart et al.	04-06-1999
	6,197,715		Bansleben et al.	3-2001

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Document Number	Kind Code (if known)	Country	Date of Publication (MM-DD-YYYY)	Translation Yes No	
	19707236	A1	DE	08-27-1998		
	19944993	A1	DE	03-22-2001	X	
	19959251	A1	DE	12-12-1999	X	
	0 381 495	A2	EP	08-08-1990		
	0 416 815	A2	EP	03-13-1991		
	0 420 436	A1	EP	04-03-1991		
	0 532 098	A1	EP	03-17-1993		
	0 641 804	A2	EP	03-08-1995		
	0 874 005	A1	EP	10-28-1998		
	0 816 384	A2	EP	01-07-1998		
	0 884 331	A2	EP	12-16-1998		
	0 893 455	A1	EP	01-27-1999		
	1 099 714	A1	EP	11-12-1999	X	

Substitute for forms 1449A/PTO & 1449B/PTO	ATTORNEY'S DKT No. 008111-160	APPLICATION No. Unassigned
	APPLICANT Peter B. Mackenzie et al.	
	FILING DATE July 29, 2003	GROUP Unassigned
	<b>FIRST INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Document Number	Kind Code (if known)	Country	Date of Publication (MM-DD-YYYY)	Translation Yes No	
	Hei 9-255712		JP	09-30-1997		
	Hei 9-272709		JP	10-21-1997		
	Hei 9-272713		JP	10-21-1997		
	10-324709		JP	03-21-1997	X <sup>1</sup>	
	94/01471		WO	01-20-1994		
	94/11410		WO	05-26-1994		
	94/14854		WO	07-07-1994		
	96/23010		WO	08-01-1996		
	97/02298		WO	01-23-1997		
	97/17380		WO	05-15-1997		
	97/38024		WO	10-16-1997		
	97/48735		WO	12-24-1997		
	97/48736		WO	12-24-1997		
	97/48737		WO	12-24-1997		
	97/48739		WO	12-24-1997		
	97/48740		WO	12-24-1997		
	97/48742		WO	12-24-1997		
	97/48777		WO	12-24-1997		
	98/03521	A	WO	01-29-1998		
	98/03559		WO	01-29-1998		
	98/11144		WO	03-19-1998		
	98/27124		WO	06-25-1998		
	98/30609		WO	07-16-1998		
	98/30610		WO	07-16-1998		
	98/37110		WO	08-27-1998		
	98/40374		WO	09-17-1998		
	98/40420		WO	09-17-1998		
	98/40421		WO	09-17-1998		
	98/41529		WO	09-24-1998		
	98/42664		WO	10-01-1998		
	98/42665		WO	10-01-1998		
	98/47933		WO	10-29-1998		
	98/47934		WO	10-29-1998		
	98/56832		WO	12-17-1998		
	99/02472		WO	01-21-1999		
	99/02570		WO	01-21-1999		
	99/05189		WO	02-04-1999		
	99/09078		WO	02-25-1999		
	99/10391		WO	03-04-1999		
	99/12981		WO	03-18-1999		



Substitute for forms 1449A/PTO & 1449B/PTO  <b>FIRST INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	ATTORNEY'S DKT NO. 008111-160	APPLICATION No. Unassigned
	APPLICANT Peter B. Mackenzie et al.	
	FILING DATE July 29, 2003	GROUP Unassigned

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Document Number	Kind Code (if known)	Country	Date of Publication (MM-DD-YYYY)	Translation Yes	No
	99/62968	A	WO	12-09-1999		
	00/04057		WO	01-27-2000		
	00 15646	A	WO	03-23-2000		
	00/47592	A1	WO	02-09-1999		
	00/50470	A	WO	08-31-2000		
	00/58320	A1	WO	03-29-1999		
	01/07491	A1	WO	07-27-1999		
	01/07492	A1	WO	09-20-1999	X	
	01/12684	A1	WO	08-02-1999		
	01/14391	A1	WO	09-20-1999	X	
	01/21586	A1	WO	09-20-1999	X <sup>1</sup>	
	01/23396	A1	WO	09-29-1999		
	01/42257	A1	WO	12-09-1999	X	
	01/55231	A1	WO	01-26-2000	X <sup>1</sup>	
	01/92342	A	WO	12-06-2001		

NON PATENT LITERATURE DOCUMENTS	
Examiner Initials	Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	A. BACH, et al., "Metal Chelates of N-(1-Pyrrolyl)salicylaldehydes and Their Structure Determination by X-Ray Structure Analysis and X-Ray Absorption Spectroscopy (XANES)," <i>Z. Naturforsch., Chem. Sci.</i> , 1996, pp. 757-764, Vol. 51(6)
	A. V. BORDUNOV, et al., "Azacrown Ethers Containing Oximic and Schiff Base Sidearms - Potential Heteronuclear Metal Ion Receptors," <i>Tetrahedron, NL</i> , 29 December 1997, pp. 17595-17606, Vol. 53, No. 52, Elsevier Science Publishers, Amsterdam
	M. BROOKHART et al., <i>J. Am. Chem. Soc.</i> , 1995, pp. 6414-6415, 117
	BUELOW, "Chemische Berichte," <i>Berichte Der Deutschen Chemischen Gesellschaft, DE, Verlag Chemie. Weinheim</i> , 1905, pp. 3915, 3917, Vol. 38
	R. M. CLARAMUNT, et al., "Rhodium (I) Complexes with the Polydentate Ligand 3,5-bis(4-methylpyrazol-1-yl)-4-methylpyrazole," <i>Journal Organometallic Chemistry</i> , 1991, pp. 259-271, Vol. 412, No. 1-2
	I. O. FRITSKY, et al., "Template Synthesis of Square-Planar Nickel (II) and Copper (III) Complexes Based on Hydrazide Ligands," <i>J. Chem. Soc., Dalton Trans.</i> , 1998, pp. 3269-3274, Vol. 19
	V. C. GIBSON et al., <i>Chem. Commun.</i> , 1998, pp. 313-314
	S. D. ITTEL et al., "Late-Metal Catalysts for Ethylene Homo- and Copolymerization," <i>Chem. Rev.</i> , 2000, pp. 1169-1203, 100
	W. KEIM et al., <i>Angew Chem. Int. Ed. Engl.</i> , 1981, pp. 116-117, 20
	D. H. McCONVILLE et al., <i>J. Am. Chem. Soc.</i> , 1996, pp. 10008-10009, 118
	V. M. MOHRING et al., <i>Angew. Chem. Int. Ed. Engl.</i> , 1985, pp. 1001-1003, 24
	K. K. NARANG, et al., "Glyoxal-Aroyl Hydrazone (Schiff Base) Complexes of Nickel (II), Copper (II) & Zinc (II)," <i>Indian J. Chem., Sect. A.</i> , 1982, pp. 830-832, Vol. 21A(8)
	K. K. NARANG, et al., "Synthesis, Characterization, Thermal Studies and Biological Activity of Iron (III) Complexes with Some Acylhydrazines," <i>Synth. React. Inorg. Met.-Org. Chem.</i> , 1993, pp. 971-989, Vol. 23(6)
	F. A. NEUGEBAUER, "ESR Studies of 1,2,4,5-Tetraazapentenyls," <i>Chem. Ber.</i> , 1973, pp. 1716-1723, Vol. 106(6)
	M. PEUCKERT et al., <i>Organometallics</i> , 1983, pp. 594-597, 2
	S. B. ROSCOE et al., "Polyolefin Spheres from Metallocenes Supported on Noninteracting Polystyrene," <i>Science</i> , 1998, pp. 270-273, 280

Substitute for forms 1449A/PTO & 1449B/PTO	ATTORNEY'S DKT NO.	APPLICATION NO.
	008111-160	Unassigned
	APPLICANT	
	Peter B. Mackenzie et al.	
FIRST INFORMATION DISCLOSURE STATEMENT BY APPLICANT	FILING DATE	GROUP
	July 29, 2003	Unassigned

NON PATENT LITERATURE DOCUMENTS	
Examiner Initials	Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	L. ROSENBERG, et al., "Binuclear Nickel (II) and Cobalt (II) Complexes of the Novel Binucleating Ligand 3,-Bis(1'-pyrazolyl)pyridazine. Crystal and Molecular Structure and Magnetism of Bis[ $\mu$ -3,6-bis(1'-pyrazolyl)pyridazine-N <sup>1</sup> (Ni <sup>1</sup> )N <sup>2</sup> (Ni <sup>1</sup> )N <sup>2</sup> (Ni <sup>2</sup> )N <sup>2</sup> (Ni <sup>2</sup> )N <sup>2</sup> (Ni <sup>2</sup> )]-bis[diaquanickel (II)] Tetrachloride Dihydrate," <i>J. Chem. Soc., Dalton Trans.</i> , 1986, pp. 625-631, Vol. 3
	M. SCHMID et al., "New C <sub>2v</sub> and Chiral C <sub>2</sub> -Symmetric Olefin Polymerization Catalysts Based on Nickel (II) and Palladium (II) Diimine Complexes Bearing 2,6-Diphenyl Aniline Moieties: Synthesis, Structural Characterization, and First Insight into Polymerization Properties," <i>Organometallics</i> , 2001, 20(11), 2321
	R. R. SCHROCK et al., <i>J. Am. Chem. Soc.</i> , 1997, pp. 3830-3831, 119
	R. R. SCHROCK et al., <i>J. Am. Chem. Soc.</i> , 1999, pp. 5797-5798, 121
	S. H. STRAUSS, <i>Chem. Rev.</i> , 1993, pp. 927-942, 93
	A. A. WATSON, et al., "Chiral Heterocyclic Ligands. VIII. Syntheses and Complexes of New Chelating Ligands Derived from Camphor," <i>Aust. J. Chem.</i> , 1995, pp. 1549-1572, Vol. 48, No. 9
	OLEG V. MIKHAILOV, "From Novel Complexing Conditions to Novel Coordination Compounds of Nickel (II) with Dithiooxamide and its Bulky Analogues," <i>Transition Met. Chem.</i> , (1996), 363-369, 21
	TIMO REPO, et al., "Ethylenebis(Salicylidenetiminato)zirconium Dichloride: Crystal Structure and Use as a Heterogeneous Catalyst in the Polymerization of Ethylene," <i>Macromolecules</i> , (1997), 171-175, 30

Examiner Signature	Date Considered
--------------------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. **SEND TO:** Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

<sup>1</sup> English abstract only.